Safety and efficacy of apixaban and rivaroxaban versus warfarin in real-world atrial fibrillation patients look similar to their randomized trials: insights from the GARFIELD-AF registry

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Background

- Generalisability of patient selection in the landmark trials for apixaban (ARISTOTLE) and rivaroxaban (ROCKET AF) for use in non-valvular atrial fibrillation (AF) is reportedly limited
- Although observational data have confirmed the safety and efficacy of NOACs in unselected AF populations, robust replication of the landmark randomized trials is currently lacking

Purpose

- To investigate the generalisability of the inclusion criteria of ARISTOTLE and ROCKET AF to real-world AF patients
- To assess reproducibility of ARISTOTLE and ROCKET AF in the world's largest prospective registry of newly diagnosed AF patients: GARFIELD-AF

Methods

- We included patients from GARFIELD-AF Cohorts 3-5 (recruited April 2013-August 2016) for the analysis, as NOACs had not yet been introduced into many countries prior to 2013
- We assessed eligibility of AF patients on apixaban or VKA for ARISTOTLE, and those on rivaroxaban or VKA for ROCKET AF using the selection criteria of the original trials
- We replicated trial criteria and obtained hazard ratios (HRs) for NOAC versus VKA through Cox models using the propensity method of overlap weighting to balance covariates in the population
- We compared the estimates from observational data with those from the original trials for the endpoints stroke or systemic embolism (SE), major bleeding, and all-cause mortality

Results

Figure 1. Annual eligibility rate of GARFIELD-AF apixaban and rivaroxaban users as assessed by original trial criteria

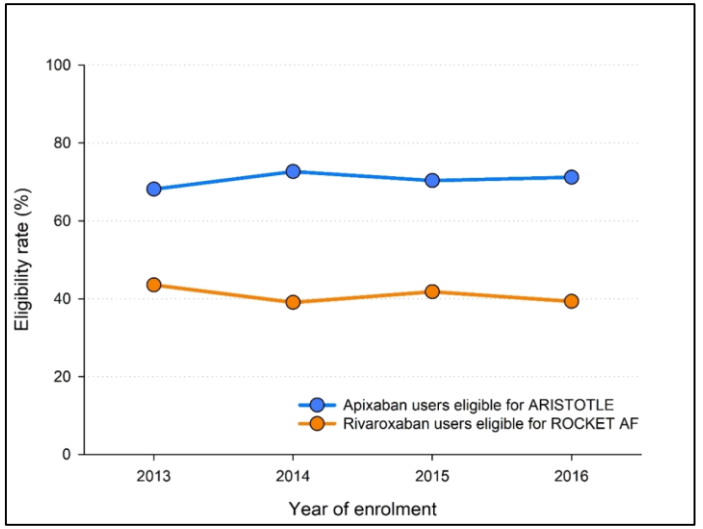
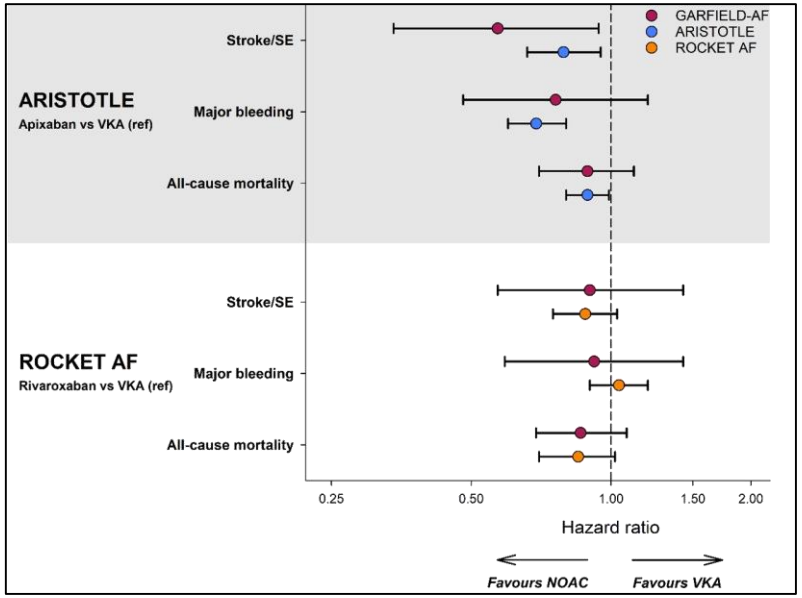


Figure 2. HRs (95%CI) comparing NOAC vs VKA (ref) in apixaban and VKA users eligible for ARISTOTLE (top) and rivaroxaban and VKA users eligible for ROCKET AF (bottom)



- Among GARFIELD-AF patients on apixaban, 2570/3615 (71%) would have been eligible for ARISTOTLE. Among GARFIELD-AF patients on rivaroxaban, 2005/4914 (41%) would have been eligible for ROCKET AF. Eligibility rates were stable over time (Figure 1)
- ROCKET AF-eligible rivaroxaban or VKA users had higher prevalence of cardiovascular co-morbidities than ARISTOTLE-eligible apixaban or VKA users
- NOAC vs VKA estimates obtained in GARFIELD-AF were compatible with results of the original trials for all selected outcomes (Figure 2)

Conclusion

- Representativeness of ARISTOTLE and ROCKET AF for real-world AF patients was limited, ROCKET AF's criteria being more restrictive
- The results from ARISTOTLE and ROCKET AF appear robust and reproducible in real-world patients with newly diagnosed AF

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